period as extended by the Two-Month Extension of Time filed concurrently herewith. Reconsideration of all outstanding grounds of the rejection and allowance of the subject application are believed in order and respectfully requested.

By this Amendment, independent claims 1 and 21 are amended in order to more clearly recite a biosensing cell, which comprises a noise cancellation loop that is electrically distinct from an analyte reaction zone of the biosensing cell, and a method of reducing electromagnetic interference with such a noise cancellation loop. Although these features relating to the noise cancellation loop were believed previously set forth in original independent claims 1 and 21, the amendments made by this response are submitted to more clearly emphasize these features. Antecedent basis for this Amendment is located throughout the application as filed, and particularly in Figures 2-9. As such, it is submitted that independent claims 1 and 21, particularly as amended by this response, are allowable over the prior art of record for at least the reasons set forth below. Further, it is submitted that each of the claims dependent on independent claims 1 and 21 are also allowable over the prior art of record for at least the reasons set forth below.

The Examiner relies on International Patent WO 89/02593 to Harmon and U.S. Patent No. 4,999,582 to Parks et al. in rejecting all of the pending claims 1-23. Specifically, claims 1, 10-13, 15-18, and 20 are rejected under 35 U.S.C. § 102(b) as being anticipated by Harmon and claims 1-23 are rejected under 35 U.S.C. § 103(a) unpatentable over Parks in view of Harmon.

The Harmon reference describes an electrochemical sensor 10, best shown in Fig. 1, for detecting an electrochemically reactive substance in a fluid and for removing a background current that can be created by such a measurement. The sensor 10 has an electrolyte reservoir 14, which functions as a reaction zone. Functionally located within the reservoir 14, the sensor 10 has a counter electrode 40, sensing electrode 32, and a compensating electrode 36. In use, the sensing electrode 32 is biased to a potential to cause the electrochemical reaction of the sought after substance at a working surface 34 of the sensing electrode 32. As such, current flows between the sensing electrode 32 and the counter electrode 40 through the electrolyte in the reservoir 14 or reaction zone. The compensating electrode 36 is biased to a potential that is lower (never higher) than that of the sensing electrode 32 to produce current flow through the reaction zone due to the

electrochemical reaction of interferant gases at a working surface 36c of the compensating electrode 36. That is, current also flows between the compensating electrode 36 and the counter electrode 40 through the reaction zone. The current flow between the sensing electrode 32 and the counter electrode 40 is the total current flow through the reaction zone and is the sum of the current flow between the current flow between the sensing electrode 32 and the counter electrode 40 and the compensating electrode 36 and the counter electrode 40. As such, the current flow between the compensating electrode 36 and the counter electrode 40 can be subtracted from the current flow between the sensing electrode 32 and the counter electrode 40 to obtain the current flow due to the sought after substance. Importantly, for this technique to work, the compensating electrode 36 and the counter electrode must be located within the reaction zone.

It is submitted that each of independent claims 1 and 21, as presently amended, set forth a biosensor cell having a noise cancellation loop that is electrically distinct from a reaction zone of the biosensor cell and a method of reducing electromagnetic interference in such a biosensor cell. The presently claimed biosensor cell includes a measurement loop formed from a pair of spaced apart conductors located on a substrate. A test cell, which includes an analyte reaction zone, is connected across ends of the spaced apart conductors. As such, the measurement loop is formed by the pair of conductors and the analyte reaction zone. Additionally, a noise cancellation loop electrically distinct from the analyte reaction zone is physically arranged to be exposed to substantially the same electromagnetic environment as the measurement loop. As such, the noise cancellation loop can be physically aligned to the measurement loop and used to substantially cancel the effect of electromagnetically propagated field energy irradiating the biosensor cell. Therefore, it is submitted that a noise cancellation loop electrically distinct from a reaction zone as defined within independent claim 1 and as summarized above, is patentably distinct from the compensating electrode and counter electrode of Harmon. For at least these reasons, withdrawal of the rejection of independent claim 1 and claims 10-13, 15-18, and 20 which depend therefrom is believed proper and respectfully requested.

Claims 1-23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Parks et al. in view of Harmon. Parks et al. describes a biosensor test cell that includes a pair of electrodes located on a substrate. The test cell includes a reaction zone between the conductors. Parks et al. does not describe, suggest, or provide any desire for a noise cancellation loop.

It is respectfully submitted that a combination of Parks et al. and Harmon could not result in the present invention, particularly as recited in amended claims 1 and 21. As described above, Harmon does not provide a noise cancellation loop that is electrically distinct from a reaction zone. Moreover, Harmon does not suggest providing the compensating electrode and counter electrode outside of the reaction zone. Indeed, if the compensating electrode and counter electrode were positioned outside of the reaction zone of the Harmon device, the desired function of this circuit would be destroyed. The combination of Parks et al. and Harmon cannot provide the presently claim invention. Accordingly, withdrawal of the rejection of claim 1-21 under 35 U.S.C. § 103(a) as being unpatentable over Parks et al. in view of Harmon is believed proper and respectfully requested.

In view of the above remarks, it is respectfully submitted that the claims and the present application are now in condition for allowance. Approval of the application and allowance of the claims is earnestly solicited.

Respectfully Submitted,

Dated: January 10, 2003 By: _____

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EXHIBIT A
(Marked-up copy of claim amendments)

1. (Amended) A biosensing cell assembly comprising:

a. a substrate having a proximal end and a distal end;

b. a measurement loop located on the substrate, the measurement loop including:

i. a pair of spaced-apart conductors each having a proximal end and a distal end, the proximal ends located at the proximal end of the substrate for connection to an instrument,

ii. a test cell connected across the distal ends of the conductors, the test cell having an analyte reaction zone with an electrical impedance that varies in response to analyte concentration; and

c. a noise cancellation loop electrically distinct from the analyte reaction zone and physically arranged to be exposed to substantially the same electromagnetic environment as the measurement loop and electrically connected to substantially cancel the effect of electromagnetically propagated field energy irradiating the biosensor cell assembly.

21. (Amended) A method of reducing electromagnetic interference in a measurement loop of the type providing an indication of analyte concentration using a response current passing through a test cell having an analyte reaction zone by way of a pair of conductors on a substrate, the method comprising:

a. physically aligning a noise cancellation loop with a measurement loop formed by the test cell and pair of conductors on a substrate such that the noise cancellation loop is electrically distinct from the analyte reaction zone; and

b. connecting the noise cancellation loop in anti-parallel with the measurement loop such that any stray electromagnetic field induced current in the measurement loop is cancelled by a current induced by the same stray electromagnetic field in the noise cancellation loop.

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